

ABSTRACT

A method and system for providing a magnetic element is disclosed. The method and system include providing a free layer, a spacer layer, and a pinned layer. The free layer is ferromagnetic and has a free layer magnetization. The spacer layer is nonmagnetic and resides between the pinned and free layers. The pinned layer includes first and second ferromagnetic layers having first and second magnetizations, a nonmagnetic spacer layer, and a spin depolarization layer. Residing between the first and second ferromagnetic layers, the nonmagnetic spacer layer is conductive and promotes antiparallel orientations between the first and second magnetizations. The spin depolarization layer is configured to depolarize at least a portion of a plurality of electrons passing through it. The magnetic element is also configured to allow the free layer magnetization to change direction due to spin transfer when a write current is passed through the magnetic element.